

DOCKET OF
R&D PRELIMINARY DISCLOSURES

CONFIDENTIAL

PHILIP MORRIS, USA
MARCH 10, 1982

1003478999

R&D 1 (PM 1046) METHOD OF LOWERING METAL TO ANION RATIO IN PAPER

R. Greene
New Product Development/Gauvin/Meyer

Normal sodium citrate is applied to wrapper with extra citric acid added to the coating solution such that the solution becomes substantially acid. This coating results in increased molar ratios of citrate to metal. It is believed that this change in the cation to anion ratio results in lower CO and CO per puff delivery. The cation to anion ratio is normally 3:1. Results obtained so far have been for ratios from 1.43:1 to 5.86:1. These results follow a pattern similar to that for humic acid dye additions. This then should apply to both removal of the metal by washing and to lowering the metal to anion ratio of the burn additive.

5-20-81 Disclosure received - inventor notified.
7-22-81 Disclosure to SAH for follow-up
9-17-81 Inventor trying to verify early findings.

* * * * *

R&D 2

ON-LINE ANALYSIS OF NO₃

E. Thomas and W. Harvey
Analytical/Kuhn/Farone

A method for sampling tobacco/water slurries with approximately 50% solids for analysis by an Autoanalyzer method is disclosed. The method is particularly useful in monitoring the rate of microbial denitrification on-line.

11-5-81 Disclosure received by SAH from AIP.
12-81 W. Farone recommends filing.
1-26-82 Inventors notified regarding status.

* * * * *

R&D 3

NON-INHALING CIGARETTE FOR CONVENTIONAL SMOKERS

D. Lowitz
Applied Research/Farone

A "non-inhaling" cigarette is designed in such a manner that full flavor delivery and nicotine delivery are acceptable to conventional smokers.

11-30-81 Disclosure received from Patent Group.
12-81 Discussed with D. Lowitz.

* * * * *

1003479000

R&D 4

DYNAMIC CIRCUMFERENCE GAUGE

C. Irving
Process Development/Watson/Turano

FILED 11-6-81 Combined with priority application PM 958 and filed as CIP.

* * * * *

R&D 5 (PM 1074) TREATMENT OF TOBACCO PARTICLES

G. Keritsis and H. Sun
Process Development/Watson/Turano

Various processes for treating CT with enzymes such as cellulase are disclosed. The treated material may be homogenized and sprayed or applied onto tobacco components or tobacco substitutes or alternatively, may be extruded in a variety of shapes.

12-9-81 Disclosure received.
1-26-82 Inventor notified.
2-1-82 Mr. Keritsis noted that he is currently developing examples for an application.
3-3-82 Reviewed disclosures with Mr. Keritsis; examples expected shortly.

* * * * *

R&D 6 (PM 897) SYNTHESIS OF PYROLYTIC PRECURSORS TO PRODUCE ALDEHYDIC-TYPE FLAVORANTS

M. Bourlas and H. Grubbs
Chemical Research/Sanders/Osden

Polymeric flavorant release compounds having controlled thermal decomposition properties producing aldehydic-type flavorants on combustion are disclosed. Prior to smoking, the compounds are non-volatile and non-migratory.

CODE 2
5-7-79 Disclosure received in Patent Group - lacks detail.
9-4-79 Preliminary synthesis of monomers underway.
1-25-80 Compounds prepared for subjective evaluation.
3-80 Inventors hope to complete this project by the end of August.
6-30-80 Project being actively pursued by inventor Grubbs and assistant. Should be completed by end of summer.
9-10-80 Monomer synthesized and attempts to polymerize underway according to Grubbs.
6-17-81 Grubbs indicates that experimental work is nearly completed.
11-2-81 Inactivated pending availability of additional information.
12-17-81 Disclosure placed on R&D Docket.
1-82 Inventors notified.

* * * * *

1003479001

R&D 7 (PM 779) MEANS TO MEASURE TOBACCO ROD FIRMNESS

J. Osmalov
Administration Services/Daniel/Thomson

- 12-17-81 Disclosure received from Patent Staff.
- 1-29-82 Discussed with C. Irving and he will follow-up with Osmalov.
- 2-19-82 Met with Osmalov and Irving; Osmalov will review disclosure and update to reflect recent development of the system.

* * * * *

R&D 8 (PM 1065) PHOSPHATE/TETRABORATE TREATMENT OF CIGARETTE WRAPPERS

N. Rainer
Process Development/Watson/Turano

Cigarette paper is treated with a mixture of phosphate and tetraborate salts to alter the burn characteristics.

- 12-17-81 Disclosure received from Patent Group.
- 1-26-82 Inventor notified.
- 2-4-82 Note from inventor indicating that the combination is inoperative.,
- 3-4-82 State-of-the-Art search requested by inventor.
- 3-6-82 Search results sent.
- 3-8-82 Recommend inactivating.

* * * * *

R&D 9 (PM 980) ANTISTATIC MEANS FOR TRAPPING TOBACCO FINES INSIDE PACK

C. Moogalian
New Product Development/Gauvin/Meyer

Polypropylene film is placed inside the cigarette package in order to trap tobacco fines, thus preventing migration of fines to the filter tips of cigarettes contained therein.

- 12-17-81 Disclosure received from Patent Group.
- 1-26-82 Inventor notified.
- 2-26-82 Inventor is working with Manufacturing to develop.

* * * * *

1003479002

R&D 10 (PM 981) SIMULATED SMOKING ARTICLE

C. Moogalian
New Product Development/Gauvin/Meyer

A non-tobacco simulated "smoking" article that releases flavorants on puffing but does not require combustion is disclosed.

12-17-81 Disclosure received from Patent Group; conceptual stage at this time.

* * * * *

R&D 11 (PM 1049) SLIDING VALVE FLAVOR CHAMBER FOR FILTERS

R. Hale
New Product Development/Daylor/Meyer

A sliding valve flavor chamber is installed in a filter to deliver flavor, particularly in low delivery cigarettes. The smoker may control the amount of flavor delivered. This concept is similar in some respects to the DIAL-A-TAR project.

12-17-81 Disclosure received from Patent Group; conceptual stage.
1-26-82 Inventor notified.

* * * * *

R&D 12 (PM 1069) METHODS FOR ALTERING SIDESTREAM SMOKE

A. Kallianos and R. Greene
New Product Development/Daylor/Gauvin/Meyer

Treatment of cigarette wrapper with water-soluble phosphates and metaphosphate glasses appears to reduce visibility and quantity of sidestream smoke without altering the porosity of the paper.

12-17-81 Disclosure received from Patent Group.
1-26-82 Inventors notified.

* * * * *

R&D 13 (PM 1070) USE OF FUSED SALTS ON CIGARETTE WRAPPER PAPER

A. Kallianos and R. Greene
New Product Development/Daylor/Gauvin/Meyer

Treatment of cigarette wrapper paper with fused salts results in improvement of sidestream odor.

12-17-81 Disclosure received from Patent Group.
1-26-82 Inventors notified.

* * * * *

1003479003

R&D 14 (PM 834, 835) IMPROVEMENTS RELATED TO AROMA OF TOBACCO EXTRACTS

D. Keel
New Product Development/Daylor/Meyer

Tobacco extract is treated with ammonia followed by optional heating step to enhance flavor thereof.

INACTIVE

12-17-81 Disclosure received from Patent Group.
Previous decision in September, 1981, was made not to pursue coverage on this.

* * * * *

R&D 15 (PM 1027) OXIDATION OF TOBACCO IN PRESENCE OF POLYVALENT METAL BASE

N. Rainer
Process Development/Watson/Turano

Tobacco is heated under basic oxidizing conditions [i.e., Ca(OH)_2] in a pressure vessel to effect stiffening of the tobacco. CV increases in the range of 25% have been obtained. Other oxidizing agents such as O_3 , H_2O_2 and calcium peroxide may be used. This is related to the PERKS project and applications covering some aspects were filed in June, 1981.

2-4-82 Disclosure received from Patent Group.
2-26-82 Inventor notified.

* * * * *

R&D 16 (PM 1032) IMPROVED METHOD FOR MAKING 2-SUBSTITUTED-PYRROLINES AND PYRROLIDINES

H. Secor
Chemical Research/Sanders/Osdene

A process is disclosed in which an α -hydrogen containing ester is reacted with the anion of a protected secondary lactam or tertiary lactam to give β -keto lactams. Such β -keto lactams can be hydrolyzed with acid to 2-substituted pyrrolines or pyrrolinium derivatives which can then be reduced to 2-substituted pyrrolidines.

2-4-82 Disclosure received from Patent Group.
2-26-82 Inventor notified.

* * * * *

1003479004

R&D 17 (PM 1036) PROCESS FOR THE PREPARATION OF MENTHONE AND MENTHOL

S. Haut
Chemical Research/Sanders/Osdene

2-Isopropylanisole is reduced to 6-isopropylcyclohexanone by Li/NH₃/t-BuOH. Conjugate addition of CH₃MgI or CH₃Li gives a mixture of menthone and isomenthone. Epimerization to menthone followed by reduction yields menthol.

2-4-82 Disclosure received from Patent Staff.
3-1-82 Inventor notified.

* * * * *

R&D 18 (PM 829) ON-LINE QUANTITATION OF PLASTICIZER IN FILTER RODS

D. Watson and W. Harvey
Analytical Research/Kuhn/Farone

The device would provide for measurement of absorbed energy at selected microwave frequencies as this energy is directed through the filter rods on a maker. These measurements, once calibrated against plasticizer content of the filter material, would be used through a feedback circuit to control the amount of plasticizer added.

Related to 877.

CODE 4
4-24-78 Disclosure received.
8-18-78 This device functions similarly to very close art in-house and in a prior art reference. Under advisement pending further developments.
1-80 This case will be reevaluated in view of Steinbrecher case which should be filed soon.
3-7-80 Disclosure sent to WLKT for application preparation.
4-17-80 Torrente visit scheduled.
6-17-80 Discussed with Torrente.
8-21-80 Asked inventors for more information in order to proceed with application.
1-15-81 Information not received to date.
3-23-81 WLKT instructed not to do any further work on this case.
5-18-81 Recommend sending to F&N ASAP.
8-29-81 Memo to SAH asking her to prompt a decision regarding disposition of this case.
9-9-81 Farone to send memo concerning disposition.
1-4-82 SAH is monitoring ongoing work.
2-24-82 Transferred to R&D docket.
3-1-82 Inventors notified.

* * * * *

1003479005

R&D 19 (PM 836) BONDING OF POLYPROPYLENE WRAP TO ITSELF BY LASER IRRADIATION

W. Farone, A. Lilly, Jr., P. Martin and W. Claflin
Physical Research/Kassman/Farone
New Product Development/Meyer

Techniques for bonding two sheets together at high speed using focused (2 focal length) CO₂ laser beam. Bonded area around 0.008 diameter with reflecting foil beneath the wrap. Speed for bonding was 590 feet/minute with 40-60 watts power.

CODE 1

5-23-78 Disclosure received.
7-12-78 Search requested from outside firm.
7-28-78 Search received - sent to Farone for evaluation.
Final disclosure details expected following testing.
11-1-78 Meeting with Farone et al -- special laser has to be ordered.
8-79 Testing now in progress.
11-19-79 Laser has been received and testing is active.
1-24-80 Memo to Farone indicating that work is progressing.
6-27-80 Work is still proceeding -- waiting for further details.
9-4-80 Disclosure now in process of preparation by inventors.
1-15-81 Disclosure not received to date.
9-10-81 Work continues and best mode is being sought.
2-82 Woody Gentry contacted -- no new information available.
2-24-82 Transferred to R&D docket.
3-1-82 Inventors notified.

* * * * *

R&D 20 (PM 925) NWA IMPROVEMENTS

W. Nichols
New Product Development/Gauvin/Meyer

The disclosure relates to processing improvements made in the wrap-less cellulose acetate filter.

9-14-79 Disclosure logged in - inventor notified.
1-24-80 One case (PM 914, Gergely) based on these improvements has been allowed.
4-14-80 Awaiting further disclosure and developments.
6-27-80 Awaiting further disclosure and developments.
9-4-80 New material not yet received.
1-15-81 Inventor awaiting input regarding permission to disclose further data.
2-24-82 Transferred to R&D docket.
3-1-82 Inventor notified.

* * * * *

1003479006

R&D 21 (PM 1003) CIGARETTE

T. Laszlo

A cigarette that would be a composite having a core of normal filler, surrounded by an outer layer of tobacco treated to be incapable of sustaining combustion if not being puffed. Thus, only the core would sustain static burning. Since the core would be "normal" it would restart the rest once puffing was resumed. This arrangement would help to avoid fires caused by contact with fibers.

11-19-80 Disclosure received - inventor notified.
2-24-82 Transferred to R&D docket.
3-8-82 Recommend inactivating.

* * * * *

R&D 22 (PM 1004) APPLICATION OF SOLID TOBACCO FLAVOR COMPOUNDS TO TOBACCO

F. Sherwood, T. Skidmore, J. Klierer
Process Development/Watson/Turano

A tobacco flavor compound is dispersed in a standard tobacco casing or after-cut solution and subjected to high shear mixing to reduce the particle size of the compound. The mixing or homogenizing can be accomplished in any of several commercially available homogenizers. Once mixed, the dispersion is sprayed onto tobacco using conventional spraying techniques.

11-20-80 Disclosure received - inventors notified.
This disclosure was requested by A. Palmer prior to Sherwood's contact with outside party to run tests.
5-18-81 Awaiting results of development work; sending memo to that effect.
2-24-82 Transferred to R&D Docket.
3-1-82 / Inventors notified.

* * * * *

R&D 23 (PM 1029) METHOD FOR MAKING SOLUBLE CARBOXAMIDE DERIVATIVES

E. Sanders
Chemical Research/Sanders/Osdene

Methods for synthesizing soluble carboxamide derivatives (i.e., WS-14) are disclosed. Salts such as Mg, Na, K are used to render the compounds soluble.

3-10-81 Disclosure made orally with notes to Hutcheson -- inventor notified of PM number.
2-24-82 Transferred to R&D docket.
3/1/82 Inventor notified.
3-5-82 Inventor requested that this disclosure be removed from docket.
3-5-82 Inactivated.

* * * * *

1003479007

R&D 24 (PM 1059) METHOD OF ADDING MENTHOL TO TOBACCO IN THE CLOSING STAGES OF CIGARETTE PROCESSING

D. Lowitz
Applied Research/Farone

(1) Provide menthol crystals in highly perforated container in path of incoming air to a tobacco pneumatic feed system that carries tobacco to the cigarette maker. (2) Same as (1) only spray liquid menthol in same position. (3) Same as (1) or (2) except provide menthol source in path of incoming air to maker chimney.

7-8-81 Disclosure received - inventor notified.
2-24-82 Transferred to R&D docket.
3-1-82 Inventor notified.
3-8-82 Prior art of L&M may prevent coverage of item (1) concept.

* * * * *

R&D 25 (PM 1061) FILTER FLAVOR CONCEPTS

W. Nichols, W. Houck, and C. Moogalian
New Product Development/Gauvin/Meyer

A filter is disclosed which contains a plastic tube which in turn has a flavorant coated or adhering to its inner wall to enhance flavor delivery in ultra low tar cigarettes.

7-13-81 Disclosure received.
2-24-82 Transferred to R&D docket.
3-1-82 Inventors notified.

* * * * *

R&D 26 (PM 1066) CIGARETTE FILTER CONTAINING A PLASTIC TUBULAR ELEMENT

J. Lephardt and W. Houck
New Product Development/Gauvin/Meyer
Analytical/Kuhn/Farone

There is disclosed a cigarette filter containing a plastic tubular element which is opened at the end oriented toward the tobacco rod and closed (but not fixed) at the mouth end. Normal pressure exerted in the filter during smoking will cause the closed end to open, thereby augmenting smoke delivery to the smoker.

CODE 2
7-23-81 Disclosure received - inventors notified.
2-24-82 Transferred to R&D docket.
3-1-82 Inventors notified.

* * * * *

1003479008

R&D 27 (PM 1071) IMPROVED FLAVOR CHAMBER LOW DELIVERY FILTER

H. Spielberg
Flavor Development/Daylor/Meyer

A filter having a "flavor chamber" and a non-porous funnel placed therein is disclosed. Dilution air as well as the smoke aerosol are forced through the narrowed channel and flavor chamber to create increased flavor and satisfaction for the smoker.

8-3-81 Disclosure received - inventor notified.
2-24-82 Transferred to R&D docket.
2-25-82 Discussed progress with the inventor.
3-2-82 Inventor notified.

* * * * *

R&D 28 (PM 1073) FRICTIONAL CONTROL OF FILLING POWER OF TOBACCO

D. Lowitz
Applied Research/Farone

hold

The object of the invention is to increase the interparticle friction in cut tobacco filler and particle/cigarette paper friction. Various means are disclosed for accomplishing the ultimate goal of enhanced filling power and therefore the use of less tobacco per cigarette.

7-29-81 Disclosure received - inventor notified.
2-24-82 Transferred to R&D docket.
3-2-82 Inventor notified.

* * * * *

R&D 29 (PM 1067) IMPROVEMENT OF "SKIP-TIPPING" APPARATUS

D. Lowitz
Applied Research/Farone

hold

Machinery is designed to remove adhesive in the region of the precoated tipping paper where perforations exist. The removal methods contemplated include heat and "wipe", or inactivation through high temperature heat, UV radiation, electron bombardment, etc.

7-23-81 Disclosure received in Patent Group.
3-5-82 Transferred to R&D Docket.
3-9-82 Inventor notified.

* * * * *

1003479009

R&D 30 (PM 1015) CONTROLLED-BURN CIGARETTE

R. Jenkins
Chemical Research/Osdene

inactivate

The central axis of the tobacco rod is treated with burn agents (Salts) to selectivity lower or raise the burn temperature of the central portion of the cigarette. Sidestream smoke is said to be less visible.

2-13-81 Disclosure received in Patent Group.
3-4-82 Transferred to R&D Docket.
3-9-82 Inventor notified.

* * * * *

R&D 31

FLAVORANTS FOR TOBACCO

S. Haut
Chemical Research/Sanders/Osdene

The disclosure relates to the use of 2,5-deoxyfructosazine as a tobacco flavorant or flavor release agent whereby compounds such as 3-methylvaleric, isobutyric or acetic acids and/or aldehydes or ketones may be released.

3-15-82 Disclosure received in Patent Group.
3-18-82 Disclosure transferred to R&D Docket.
3-18-82 Inventor notified.

* * * * *

R&D 32

DENITRATION OF BURLEY STRIP BY SEMI-SOLID FERMENTATION
DURING PRIMARY PROCESSING

J. Osmalov
Technical Planning and Information/Daniel/Thomson

Sterilized Burley strip is subjected to microbial denitration during primary processing. This process avoids the necessity of separate plant facilities to carry out denitration via a RL type process.

3-83 Disclosure received in Patent Group.
3-18-82 Disclosure transferred to R&D Docket.
3-18-82 Inventor notified.

* * * * *

1003479010

R&D 33

FIBRILLATION OF CT TO EFFECT INCREASED FILLING CAPACITY

J. Osmaiov

Technical Planning and Information/Daniel/Thomson

CT is fibrillated and then applied to filler material which has been expanded but not reordered or alternatively, it is added to the total blend after the Addt dryer. Pectin or some other "adhesive" material may be required to make the fibrils stick to the shreds.

3-82 Disclosure received in Patent Group.

3-18-82 Disclosure transferred to R&D Docket.

3-18-82 Inventor notified.

* * * * *

R&D 34

FILTER MATERIAL FOR REDUCTION OF NO

N. Rainer and C. McClung

Process Development/Watson/Turano

Granular silica gel is treated with an aqueous solution of sodium permanganate containing colloidal silica. This formulation has resulted in unexpected storage stability of the composition when placed in a PSP filter. On smoking using such filter, NO has been reduced by as much as 50%.

3-82 Disclosure received in Patent Group.

3-18-82 Disclosure transferred to R&D Docket.

3-18-82 Inventor notified.

1003479011